



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,035	07/10/2003	Chul-Soo Park	1572.1143	9806

21171 7590 12/14/2006

STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER	-
----------	---

HALEY, JOSEPH R

ART UNIT	PAPER NUMBER
----------	--------------

2627

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/616,035

Applicant(s)

PARK ET AL.

Examiner

Joseph Haley

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the pickup units being disposed in an area having the same radius as the disk must be shown or the feature(s) canceled from the claim(s) (fig. 5a shows the units being disposed in a radius larger than the disk and fig. 5b shows the units in an area smaller than that of the disk). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 12-15, 17-28 and 34-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (US 6407544) in view of Guzik (US 5825180).

In regard to claim 1, Watanabe teaches a pickup inspecting apparatus inspecting performance of pickups mounted to a disk drive and reading data from a disk, comprising: a disk driving unit rotatably supporting a disk (fig. 1 see also column 6 lines 67 and 68); and a plurality of pickup transferring units disposed around the disk driving unit (fig. 8 elements 23a-d), the pickups to the disk driving unit to read data recorded on the disk (column 6 lines 63-65), so that the pickups held by corresponding ones of the pickup transferring units are inspected at once., however does not teach each holding a corresponding one of the pickups at a same radial distance from a center of the disk (Watanabe teaches in column 7 lines 19-25 and column 2 lines 4-8 testing on a radius close to the same distance to ensure the pickups become tested under similar conditions).

Guzik teaches each holding a corresponding one of the pickups at a same radial distance from a center of the disk (see fig. 2).

The two are analogous art because they both deal with testing in disc systems.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the apparatus of Watanabe with equal radii of Guzik. The rationale is as follows: At the time of invention it would have been obvious to provide the apparatus of Watanabe with equal radii of Guzik because it would ensure the pickups were tested under equal conditions.

In regard to claim 2, Watanabe teaches a determiner transmitting a signal received from each pickup by a time division method (fig. 7 element 37); and a controller controlling each pickup by receiving the signal of the pickup according to the time division method from the determiner (fig. 7 elements 35 a and b).

In regard to claim 3, Watanabe teaches the disk driving unit comprises: a shaft to which the disk is supported; and a spindle motor connected to the shaft to rotate the disk (these are not shown in Watanabe but they are inherent elements).

In regard to claim 4, Watanabe teaches determiner transmitting a signal received from each pickup by a time division method (fig. 7 elements 34 a and b); and a controller controlling each pickup by receiving the signal of the pickup according to the time division method from the determiner (fig. 7 elements 35 a and b).

In regard to claim 12, Watanabe teaches a determiner transmitting a signal received from each pickup by a time division method (fig. 7 element 37); and a controller controlling each pickup by receiving the signal of the pickup according to the time division method from the determiner (fig. 7 elements 35a and b).

In regard to claim 13, Watanabe teaches a pickup inspecting apparatus inspecting performance of a plurality of pickups, comprising: a disk driving unit

Art Unit: 2627.

rotatably supporting a disk; and a plurality of pickup transferring units disposed around the disk driving unit so that the pickups are at a same radial distance from a center of the disk (see column 7 lines 19-25. see also column 2 lines 4-8 where Watanabe suggests testing on the same radius of the disc) to transfer the pickups to the disk driving unit, wherein the pickups are inspected at once in a programmed inspection (fig. 7 elements 23a and b).

In regard to claim 14, Watanabe teaches the disk driving unit is a single driving unit, and the disk is a single disk (fig. 7 element 25).

In regard to claim 15, Watanabe teaches a disk driving unit rotatably supporting a disk; and a plurality of pickup transferring units disposed around the disk driving unit to transfer the pickups to the disk driving unit, wherein the pickups are inspected at once in a programmed inspection, wherein the number of the pickup transferring units is more than 2 (fig. 8. see arguments for claim 11).

In regard to claim 17, Watanabe teaches the pickup transferring units move between a first area corresponding to an inside area of the disk and a second area corresponding to an outside area of the disk (fig. 1).

In regard to claim 18, Watanabe teaches the pickup transferring units move to pass through a circular line having the same radius as the disk (column 6 lines 67 and 68).

In regard to claim 19, Watanabe teaches all of the pickup transferring units are disposed in a circular area having the same radius of the disk (fig. 8 elements 23 a-d).

In regard to claim 20, Watanabe teaches all of the pickup transferring units are disposed around the disk driving unit in an outside of an area corresponding to the disk (fig. 7 elements 23a and b).

In regard to claim 21, Watanabe teaches a pickup inspecting apparatus inspecting performance of a plurality of pickups, further comprising: a base member; a disk driving unit mounted on the base member to rotatably support a disk; a plurality of pickup transferring units mounted on the base member and disposed around the disk driving unit (fig. 7 elements 23a and b); and a controller controlling the pick transferring units to transfer the pickups to the disk driving unit so that the pickups are at a same radial distance from a center of the disk (see column 7 lines 19-25. see also column 2 lines 4-8 where Watanabe suggests testing on the same radius of the disc) and controlling the pickups to read data from the disk to be inspected at once (fig. 7 elements 35a and b).

In regard to claims 22, 24, 36, 38 and 40 see claim 14 rejection above.

In regard to claim 23, Watanabe teaches a pickup inspecting apparatus inspecting performance of a pickup used in a disk drive, comprising: a base member; a disk driving unit mounted on the base member and having a spindle motor and a shaft rotatably coupled to the spindle motor; and a plurality of pickup transferring units mounted on the base member and disposed around the disk driving unit to be spaced-apart from each other at a same radial distance from a center of the disk (see column 7 lines 19-25. see also column 2 lines 4-8 where Watanabe suggests testing on the same radius of the disc).

In regard to claim 25, Watanabe teaches the pickup transferring units are disposed within a circular area around the shaft of the disk driving unit (fig. 8 elements 23a-d).

In regard to claim 26, Watanabe teaches the pickup transferring units are disposed in a circular direction of the shaft of the disk driving unit (fig. 8 elements 23a-d).

In regard to claim 27, see claim 20 rejection above.

In regard to claim 28, see claim 17 rejection above.

In regard to claim 34, Watanabe teaches the pickup transferring units are disposed opposite to each other with respect to the shaft of the disk driving unit (fig. 7 elements 23a and b).

In regard to claim 35, Watanabe teaches rotatably supporting a disk on a disk driving unit; and disposing a plurality of pickup transferring units around the disk driving unit; and transferring a plurality of pickups disposed in corresponding ones of the pickup transferring units a same radial direction from a center of the disk to the disk (see column 7 lines 19-25. see also column 2 lines 4-8 where Watanabe suggests testing on the same radius of the disc) driving unit; and inspecting all of the pickups at once (fig. 7 elements 23a and b).

In regard to claim 37, see claim 35 rejection above.

In regard to claim 39, see claim 21 rejection above.



In regard to claim 41, Watanabe teaches wherein the pickups read the data but do not record data (see column 7 lines 1-5. The heads both read and record but not at the same time therefore meeting this limitation).

Claims 5-11, 16 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view Guzik further considered with the applicant's admitted prior art.

In regard to claim 5, Watanabe and Guzik teach a pickup holder holding the pickup, however does not teach an angle adjusting part connected to the pickup holder to adjust an angle of the pickup holder with respect to the disk driving unit; and a feed motor connected to the angle adjusting part to transfer the pickup held by the pickup holder to the disk driving unit.

The applicant's admitted prior art teaches an angle adjusting part connected to the pickup holder to adjust an angle of the pickup holder with respect to the disk driving unit (fig. 1 element 125); and a feed motor connected to the angle adjusting part to transfer the pickup held by the pickup holder to the disk driving unit (fig. 1 element 125 a and b).

The three are analogous art because they both deal with the same field on invention of testing plural recording heads.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the apparatus of Watanabe and Guzik with the skew motors of the applicant's prior art. The rationale is as follows: At the time of invention it would have been obvious to provide the apparatus of Watanabe with the skew motors of the

Art Unit: 2627

applicant's prior art because it would allow for the skew angle of the head to be changed.

In regard to claim 6, Watanabe teaches a determiner transmitting a signal received from each pickup by a time division method (fig. 7 element 37); and a controller controlling each pickup by receiving the signal of the pickup according to the time division method from the determiner (fig. 7 elements 35 a and b).

In regard to claim 7, Watanabe teaches base member on which the disk driving unit and the pickup transferring units are seated, wherein the spindle motor is seated on the base member, the shaft is connected to the spindle motor, and the disk is coupled to the shaft so as to rotate together with the shaft (these are all inherent members).

In regard to claim 8, Watanabe teaches a determiner transmitting a signal received from each pickup by a time division method (fig. 7 element 37); and a controller controlling each pickup by receiving the signal of the pickup according to the time division method from the determiner (fig. 7 elements 35 a and b).

In regard to claim 9, Guzik teaches a guide block and a guide rail (column 4 lines 59-61).

In regard to claim 10, Watanabe teaches a determiner transmitting a signal received from each pickup by a time division method (fig. 7 element 37); and a controller controlling each pickup by receiving the signal of the pickup according to the time division method from the determiner (fig. 7 element 35a and b).

In regard to claim 11, Watanabe teaches the number of the pickup transferring units is 4 and arranged around the disk driving unit (fig. 8).

In regard to claim 16, Watanabe and the prior art teach all the elements of claim 16 except the pickup transferring units move in a radial direction of a center of the disk by a distance greater than the radius.

The examiner takes Official Notice that it is well known in the art to move a pickup a distance greater than the radius of the disc.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the apparatus of Watanabe and the prior art with unit that moves the pickup in an area larger than the radius of the disc. The rationale is as follows: At the time of invention it would have been obvious to provide the apparatus of Watanabe and the prior art with unit that moves the pickup in an area larger than the radius of the disc because it would make loading of the disc easier.

In regard to claim 29, see claim 16 rejection above.

In regard to claims 30 and 31, Guzik teaches wherein the transferring units move simultaneously and sequentially (see column 5 lines 60-66 where Guzik teaches head assemblies in concert and also being separately and independently controlled).

In regard to claim 32, Watanabe teaches the pickup transferring units move in a radial direction of the shaft of the disk driving unit (column 6 lines 63-65).

In regard to claim 33, Watanabe teaches the first position and second position are disposed in a radial direction of the shaft of the disk driving unit (column 6 lines 63-65).

***Response to Arguments***

Applicant's arguments with respect have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

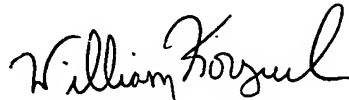
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Haley whose telephone number is 571-272-0574. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jrh



  
WILLIAM KORZUCH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600